

## INTERNATIONAL SEARCH REPORT

PCT/IB2004/003840

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B22D17/00 B22D17/20 B22D17/30 B22D17/02 B22D17/04

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B22D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 347 889 A (KOMATSU ET AL) 7 September 1982 (1982-09-07)  column 5 - column 8; claims 1,3; figures 1-5,8; examples 1,2 -----	1-5, 10-15, 17,18
X	US 4 842 038 A (FUJINO ET AL) 27 June 1989 (1989-06-27) column 3, line 14 - column 4, line 36; figure 1; table 1 -----	1-4,6,7, 10-13,17
X	US 6 068 043 A (CLARK ET AL) 30 May 2000 (2000-05-30) column 5, line 30 - column 6, line 35; claim 1; figures 1,2 ----- -/--	1-4,6,7, 10-12,18

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

28 February 2005

Date of making of the international search report

18.05.05

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 662 361 A (HITACHI METALS, LTD) 12 July 1995 (1995-07-12)  figures 1,15-17; examples 1-9 -----	1-3,5-7, 10-14, 17,18
A	EP 0 710 515 A (REYNOLDS WHEELS INTERNATIONAL LTD) 8 May 1996 (1996-05-08) the whole document -----	6-8

## INTERNATIONAL SEARCH REPORT

PCT/IB2004/003840

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4347889	A	07-09-1982	JP 1166422 C	08-09-1983
			JP 55094773 A	18-07-1980
			JP 57060108 B	17-12-1982
			DE 3000486 A1	17-07-1980
			FR 2446145 A1	08-08-1980
			GB 2040196 A ,B	28-08-1980
US 4842038	A	27-06-1989	JP 1574442 C	20-08-1990
			JP 2000148 B	05-01-1990
			JP 62124061 A	05-06-1987
			DE 3640370 A1	27-05-1987
			JP 1623725 C	18-11-1991
			JP 2049821 B	31-10-1990
			JP 63303671 A	12-12-1988
US 6068043	A	30-05-2000	NONE	
EP 0662361	A	12-07-1995	JP 3049648 B2	05-06-2000
			JP 8187566 A	23-07-1996
			DE 69423596 D1	27-04-2000
			DE 69423596 T2	19-10-2000
			EP 0662361 A1	12-07-1995
			JP 11104804 A	20-04-1999
			US 5579825 A	03-12-1996
EP 0710515	A	08-05-1996	IT 80940484 A1	07-05-1996
			AT 173419 T	15-12-1998
			CA 2161923 A1	08-05-1996
			DE 69506075 D1	24-12-1998
			DE 69506075 T2	15-04-1999
			EP 0710515 A1	08-05-1996
			US 5900080 A	04-05-1999